

10/748,274

**REMARKS**

The Examiner indicates that a certified copy of the foreign application has not yet been filed. However, as set forth in box 10 in the Request Form For Application Under 37 C.F.R. 1.53(b) filed on December 31, 2003, the certified priority document was filed in parent application Serial No. 10/230,297 on August 29, 2002.

Claim 1 is the sole independent claim and stands rejected under 35 U.S.C. § 103 as being unpatentable over Shimanuki, JP '990 and Wu. These rejections are respectfully traversed for the following reasons.

Upon reviewing the outstanding Office Action, it appears the Examiner has based each of the pending rejections on the assertion that product-by-process limitations are not given patentable weight, so that the recitation in claim 1 that "a die pad [is] provided by removing a whole lower portion of a part of a lead frame that is to serve as the die pad; ... [and] each lead [is] provided by removing a whole upper portion of a part of the lead frame that is to serve as the lead" is not given patentable weight. In this regard, the Examiner is directed to MPEP § 2113, which sets forth the applicable standard for giving patentable weight to process limitations presented in an apparatus claim:

The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in place," "press fitted," and "etched" are capable of construction as structural limitations.)

10/748,274

In the instant case, it is respectfully submitted that removing the particularly claimed portions of a lead frame that is to serve as the die pad and lead results in distinctive structural characteristics that *structurally* differentiates the claimed semiconductor device from those disclosed in the cited prior art, so that the Examiner should give patentable thereto.

Turning to the cited prior art, it is respectfully submitted that Shimanuki does not disclose or suggest the combination whereby “a die pad [is] provided by removing a whole lower portion of a part of a lead frame that is to serve as the die pad; ... [and] each lead [is] provided by removing a whole upper portion of a part of the lead frame that is to serve as the lead.” In this regard, according to one aspect of the present invention, by removing portions of the lead frame to form the respective die pad and leads, the resulting structure can provide a die pad whose upper surface is positioned higher than the lead (exemplary embodiment shown, for example, in Figure 3B of Applicants’ drawings). In contrast, Shimanuki is silent as to forming the die pad and lead from the disclosed lead frame by removing the claimed portions thereof, whereby the resulting structure includes a die pad 5 and lead 2 which do not have the relative positioning set forth in claim 1.

Further, it is respectfully submitted that JP ‘990 does not disclose or suggest “suspension leads [that] are *not* bent” as recited in claim 1. In direct contrast, as shown in Figure 15, JP ‘990 expressly discloses suspension leads 14 that are bent (*see, e.g.*, Figure 15). Claim 1 further recites in pertinent part, “a die pad provided by removing a *whole lower* portion of a part of a lead frame that is to serve as the die pad; ... [and] each lead [is] provided by removing a *whole upper* portion of a part of the lead frame that is to serve as the lead.” In direct contrast, JP ‘990 discloses removing only *part* of the upper portion of the lead frame to form the die pad and removing *part* of the lower portion of the lead frame to form the leads, thereby resulting in a

10/748,274

structural configuration that is different from that recited in claim 1 (*compare* Figure 2 of JP '990 and Figure 3B of Applicants' specification). In this regard, it is respectfully submitted that claim 1 distinguishes over Wu for reasons *similar* to those discussed above regarding JP '990.

The Examiner is directed to MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested", which sets forth the applicable standard for establishing obviousness under § 103:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejections do not "establish *prima facie* obviousness of [the] claimed invention" as recited in claim 1 because the cited prior art fails the "all the claim limitations" standard required under § 103.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 103 be withdrawn.

10/748,274


**CONCLUSION**

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



Ramyar M. Farid  
Registration No. 46,692

600 13<sup>th</sup> Street, N.W.  
Washington, DC 20005-3096  
Phone: 202.756.8000 RMF:men  
Facsimile: 202.756.8087  
Date: September 30, 2005

Please recognize our Customer No. 20277  
as our correspondence address.